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What and who really drives pedagogic innovation?

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Abstract

This article reports on findings linked to the conditions that foster pedagogic innovation in higher education. These emerged from the pedagogic innovators project (#pin), an exploration into the factors that aid and hinder the development of pedagogic innovators. They provide insights into the key factors that push individuals in higher education to innovate in their teaching. The findings of this study indicate that these are strongly associated with the individuals themselves, their attitudes, behaviours and beliefs towards creativity, innovation and the value they place on development as well as their determination to pro-actively experiment on their own and in collaboration with others. The institutional context, culture and availability of resources appears to be perceived of lesser importance. The implications these findings have for how pedagogic innovators work within higher education institutions is explored and recommendations are made that could foster conditions to cultivate and spread pedagogic innovation within and beyond a particular institution.

Keywords

Pedagogic innovation, creativity, conditions, higher education

Background

Innovation is the generation and implementation of new ideas that are of value to others. Bateson and Martin (2013) connect innovation with creativity by stating that creativity is needed to make innovation happen. In the context of learning and teaching, Reisman (2017) frames innovative pedagogy as an enabler of creativity to manage change, for problem finding and problem solving using specific knowledge. Reisman (2017, p.19) defines “innovation pedagogy” as the direct and immediate application, in the form of experimentation, of new knowledge that may still be half-developed.

Kessles (2016, p. 48) challenges the notion of “novel ideas” in innovation and acknowledges that “most creative professionals look to fellow professionals for inspiration. But when ideas are borrowed, modified and cannibalized from within, they are rarely innovative or original.” Ryan and Tilbury (2013) highlight the importance of borrowing and connecting of traditional or existing ideas to innovation. Draper, Cleaver, Cooper, Heath, Hilton and Kember (2014) conducted an institution-wide study in which they explored pedagogic innovation at the University of Hull and found that innovation is characterised by newness of pedagogical approaches, including newness to a particular discipline, a particular context, that can have a transformative impact. Jackson (2014) adds, that the drive for innovation felt by innovators is underpinned by a strong desire to make a difference to their students. Cowan (2006) adds that technology also creates opportunities for pedagogic innovation and claims that it can be an incentive to make digital innovation happen. While Ryan and Tilbury (2013) agree that technological innovations can bring dynamism and flexibility, they also acknowledge that technologies may create barriers to innovation. Ferguson et al. (2019) acknowledge the wider context of innovating in learning, teaching and assessment in higher education and the role technology plays in this.

Buckley, Nerantzi and Spiers (2017, p.115) recognise the need for using technologies based on an informed pedagogic rationale that foster “choice, flexibility and freedom”. Phipps and Clay (2018) make an interesting observation that a point may have been reached where technology itself is no longer the focus, but instead digital practice has, to a large extent, been normalised and has blended into the fabric of learning and teaching. When considering the development of technology in education from the 1970s and the subsequent availability of specialist software to meet the needs of disciplines a key driver had often been one academic, often working in isolation but committed to making pedagogical change.

Freire (2011) illuminates the importance of staying abreast with personal development and being curious about the world. This openness to learning, development and new ideas is coupled with a determination and commitment to stand out and go against the grain in their quest to persuade others to innovate too

(Jackson, 2014; James, 2015). Innovating with others, in networks and communities where structures are flat and there are trust relationships play a key role in spreading pedagogic innovation. Cowan (2006) recognises the importance peers play in connecting with like-minded individuals when experimenting with pedagogical ideas and talks about peer partnerships. Relationships, collaborations and communities help staff to support each other cognitively and emotionally, within and beyond their institutions, boosting their confidence to innovate (Jackson, 2014). Innovators are not, however, always recognised or used more widely in their own institutions to help them spread their innovations. Furthermore, Hammond (2017, pp.16-17) notes the influence of the 'businessification' of higher education and the implications this has for academics who are as he says, "increasingly subjected to an array of 'quality control' processes, in the form of task-specific data surveillance and target-aligned assessments." (Hammond, 2017, 16-17). He advocates for the empowerment of staff and students through creativity and collaboration to develop pedagogic tactics to resist and transform.

Jones-Devitt and Quinsee (2018) studied the impact recipients of the National Teaching Fellowship (NTF) Award have, concluding that institutions do not always maximise on what NTFs can bring and contribute across their institution. A funded project led by Thomas in 2007 saw the development of a regional collaborative North West Network (NWN). This network developed local networks and researched collaboratively with colleagues delivering Higher Education (HE) in a Further Education (FE) context, an opportunity often limited to colleagues working in FE. According to Fernie-Clarke and Thomas (2011, p.71) "this constructive informal activity is generally in line with that identified in the literature and websites that promote and examine the benefits of networking for the creative industries". Furthermore Nerantzi's (2016) institution-wide Greenhouse community model provides evidence of how academic staff can benefit from internal cross-disciplinary professional communities that emerge organically and are sustained around learning and teaching – these communities foster experimentation, peer support, ideas generation, collaboration and pedagogic innovation as part of their professional learning that operates on a voluntary basis and is not an institutional mandate. This model seems to have commonalities with what Rautiainen, Nikkola, Rähkä,

Saukkonen and Moilanen (2010, p.189) define as “communal creativity”, where change and transformation happens.

While Jackson (2014) acknowledges that the driver for innovators are the students, Cowan (2006) claims that higher education institutions may frame innovation more as a tool to deal with acute challenges to resolve under-resourcing, overloading, cost-cutting and income generation and therefore often use top-down approaches. Increased marketisation and competition have an impact on creativity and pedagogic innovation and it may be seen as a risk too big to take (Nelson, 2018). Nelson (2018, 3) says that, characteristically “[t]here is a strong pedagogical impulse to eliminate haphazard approaches to learning and sadly imagination and creativity are a casualty.” There is no doubt that institutions are under pressure to be competitive and implement strategic interventions that will secure respectable rankings and ratings that will be attractive to students, staff and further stakeholders. However, there is a recognition of the importance of, and demand for, creativity in graduates, especially from employers, and institutions need to recognise this through designing more creative curricula (Nygaard, Courtney and Holtham, 2010). Ryan and Tilbury (2013) as well as Ferguson et al. (2017) acknowledge that pedagogic innovations can indeed address some of the bigger challenges institutions are faced and the world is confronted with. However, they often fail to support pedagogic innovation directly but do provide the tools to enable experimentation (Ryan and Tilbury, 2013). Institutions may impose a strategy that has implications across the institution. In order to maximise engagement, Jackson (2014, p.34) suggests the need for institutions to enable their staff to “create their own visions” within a specific strategy as he indicates that innovators, and indeed all staff, need to be able to relate to a top-down strategy and have the freedom and the flexibility to input their own ideas to make change happen. The Equality Change Unit (2017, p.10) in a recent report to HEFCE, explored how innovative practice can advance equality and diversity and frame innovative practice as new and effective pedagogical ideas that have “a positive and sustainable impact on equality and diversity and could be practically adopted by other institutions.”

Gibbs (2013) emphasises that developing 'teachers' will raise the quality of teaching and foster pedagogic innovation. Stefani (2017) urges the role academic development needs to play in this and calls for academic development to be transformative and shake up practices. Phipps and Clay (2018) talk about the importance of modelling digital practices and the responsibility institution have to create the conditions for experimentation and innovation. However, Savin-Baden (2008) makes a point about wide-spread managerialism in higher education, a point that is probably even more problematic today and is seen in such examples as the push for professional recognition for Fellowship at all four descriptor levels through Advance - HE (previously the Higher Education Academy), meeting external stakeholder agendas such as records of academics' teaching qualifications, or the Research Excellence Framework (REF), Teaching Excellence Framework (TEF) and the recently developed Knowledge Excellence Framework (KEF) in the UK. Di Napoli (2014) notes that such approaches have a negative impact on engagement in the context of academic development. Crawford's (2009) study confirms that a large number of academics tend to pursue their own pedagogical interests outside their institution through disciplinary networks and communities. Nerantzi (2017; 2019) explored collaborative open learning experiences in open cross-institutional academic development settings, including communities, and identified that boundary crossing in openness is what makes a real difference to staff engagement and the changes in thinking and practice that this type of engagement can trigger. Savin-Baden (2008) highlights the need for middle management to support the creation of spaces for dialogue around learning and teaching noting that higher education institutions often think about space as physical space. A 10-year study on the National Student Survey confirmed that this may be problematic, as large investments in buildings may have an insignificant impact on student satisfaction. There is also the digital dimension of space. But space is a much broader concept with a range of functions and is often closely linked to time. Castells (1996, p.411) notes that "space is inseparable from time. It is crystallized time". Time to think, to discuss and act. And this is when space appears to unite with the notion of the space as community (Nerantzi, 2016).

Study

In an increasingly complex and challenging world, there is an urgent need to understand how higher education can better promote and support pedagogic innovation. It is envisaged that the findings of this study will be used to create knowledge assets to better understand and support pedagogic innovators in the future and maximise on their contribution within an institution and the higher education sector. This article shares the findings of this study in relation to the conditions that foster pedagogic innovations.

The pedagogic innovators study was conducted between 2015 and 2018 to investigate the beliefs, attitudes and values of higher education teachers as pedagogic innovators; the conceptions of pedagogic innovation in the context of their practice, their curricular design and students' development as well as the enabling and prohibiting factors of becoming pedagogic innovators for academics and other professionals who teach or support learning in HE. It was granted ethical approval from Manchester Metropolitan University in the United Kingdom.

Methods

A survey was administered online to individuals across the higher education sector in the UK and further afield so that a wider population could be reached.

The survey was distributed through a series of Jisc mailing lists associated with specific higher education professional networks. These were the Association of Staff and Educational Development (SEDA), the Association for Learning Technology (ALT), the Association for Learning Development in Higher Education (ALDinHE) and the Association of National Teaching Fellows (ANTF).

The survey included closed and open-ended questions around pedagogic innovation. Quantitative and qualitative data were collected including background information and demographics through the survey together with more in-depth responses about participants' perception of pedagogic innovation and pedagogic innovators that related directly to the research questions.

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The qualitative data were analysed thematically using a coding scheme to identify patterns and themes applying an inductive process and therefore illuminating what the respondents had said (Cousin, 2009). The analysis process was conducted by the authors in collaboration and codes were agreed between them following Visser, Krosnick and Lavrakas' (2000) recommendation that this approach strengthens the analysis of open-ended questions aiding reliability and validity.

Findings

The findings shared in this article are around the conditions that foster pedagogic innovation as reported by study participants together with related demographics and background information.

Demographics and background information

One hundred and forty-eight individuals completed the survey. Of those 61% (91) were female and 36% (54) male. Two percent (3) didn't state their gender. Tables 1-3 present the summarised demographic data relating to discipline and professional areas, age and country.

Table 1. Q4 What is your broader discipline or professional area?

	Art and design	Humanities	Science and engineering	Social sciences	Professional services	no response
148	13 (9%)	32 (22%)	38 (25%)	40 (27%)	12 (8%)	13 (9%)

Table 1 indicates that respondents worked in a range of disciplines and broader areas. It should be noted that some respondents reported more than one professional area or discipline.

Table 2. Q16 What is your age group?

	17-24	25-34	35-64	Over 64
146	1 (1%)	22 (15%)	117 (80%)	6 (4%)

Table 3. Q18 In which country do you live? (n.b. summarised here as continents where appropriate)

	United Kingdom	Rest of Europe	Australia/ New Zealand	Northern America	Africa	Asia
142	119 (84%)	5 (3%)	9 (6%)	5 (4%)	2 (1.5%)	2 (1.5%)

All 148 respondents work in higher education. See Table 4 for the breakdown of roles. The survey responses indicate that some reported multiple roles, percentages have, therefore, been omitted..

Table 4. Q2 What is your role in higher education?

	academic	researcher	professional services member of staff	academic developer	learning technologist	other roles
148	92	28	8	27	12	21

The responses in Table 5 (see below) suggest a positive picture of 'self' as pedagogic innovator with the remaining respondents less clear about their position.

Table 5. Q5 Do you see yourself as a pedagogic innovator?

	yes, I am a pedagogic innovator	others see me as a pedagogic innovator	not sure if I am a pedagogic innovator	no, I am definitely not a pedagogic innovator	no response
148	98 (66%)	22 (15%)	23 (16%)	1 (1%)	4 (3%)

Conditions fostering pedagogic innovations

This initial inquiry focuses on the analysis of qualitative survey responses to gain insights into the perceptions of respondents linked to pedagogic innovation, enablers and barriers that link pedagogic innovation with innovating pedagogues.

Responses to Q6 (n=148), How valuable are the following to you personally in making pedagogic innovation happen? are depicted in Figure 1. These indicate the possible role specific dimensions play in making pedagogic innovation happen.

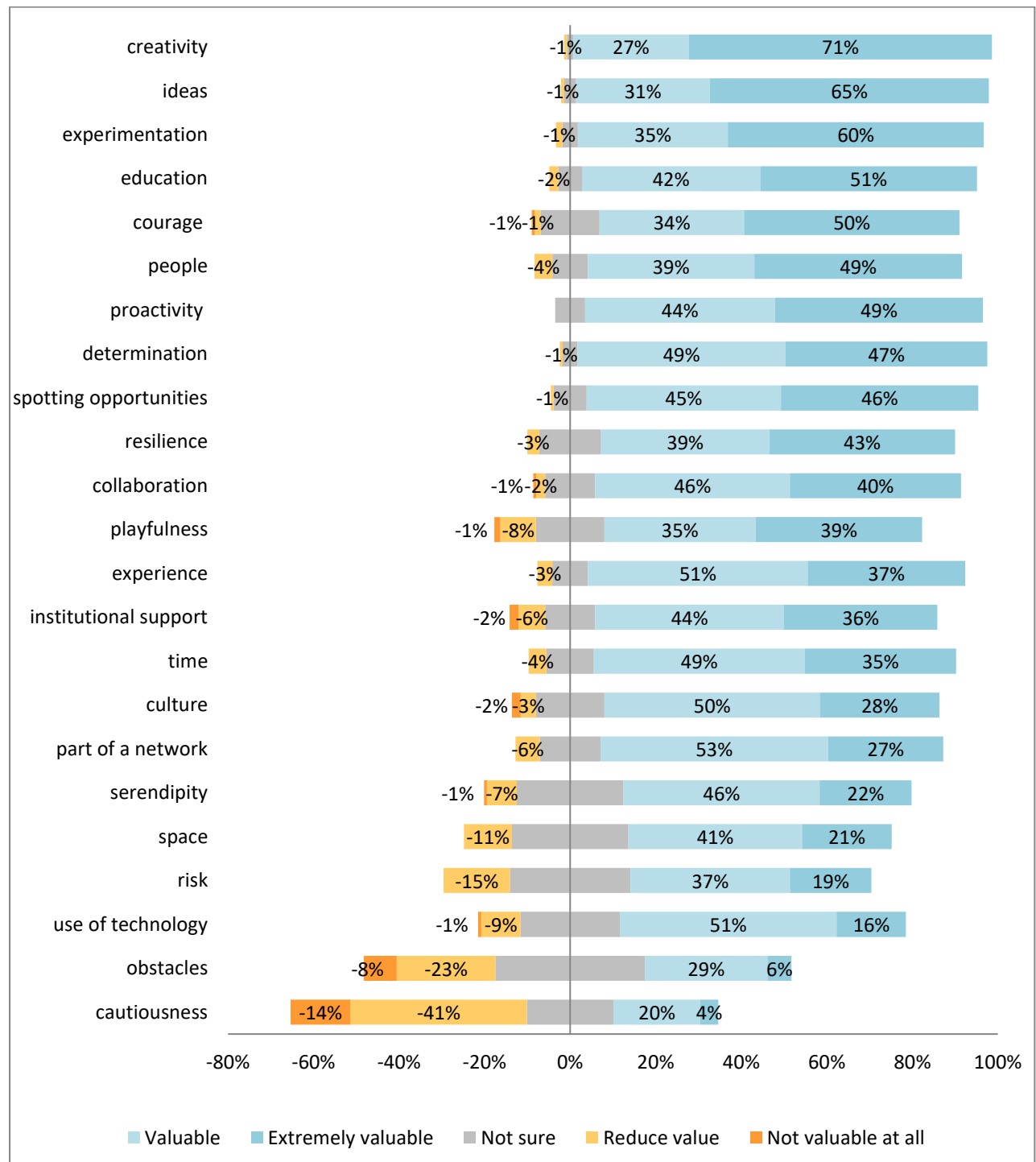


Figure 1. Responses relating to Question 6: How valuable are the following to you personally in making pedagogic innovation happen?

The above responses from Question 6 have been analysed and synthesised in the following broad dimensions:

- The individual
- Collaborations
- The institution
- Boundary crossing features

These dimensions are reported in more detail below based on the thematic analysis of qualitative survey data.

The individual

The qualities of the individual practitioner appear to play a key role in creating the conditions for pedagogic innovation. These are defined by *creativity* (98%, 141), *ideas* (97%, 139), *determination* (96%, 138) and *experimentation* (95%, 130) as the findings relating to question 6 show (see Figure 1). The following responses about what characterised pedagogic innovators also illustrate these conditions qualitatively:

“Someone who is prepared to put enormous effort and energy into trying to achieve something in spite of the challenges and barriers. Who does not give up when things do not work out but learns from the experience and tries again. Who is self-critical and analytical about their own performance. Who reflects on and learns from their and other's experiences” Respondent 5

“Someone who is brave enough to do something different, to deviate from the normal delivery methods, to be experimental and ultimately, to 'invent' new ways of teaching” Respondent 76

“Someone who experiments, breaks moulds, tries new things and approaches, particularly ones which might be unusual for the discipline” Respondent 2

“We know that true innovators will be a relatively small minority, and that they must be able to evidence the impact of their innovations to reach the majority and communicate these effectively - a lack of communication here will lead to innovations withering without reaching the majority.” Respondent 24

“Someone who is able to explore new approaches to teaching with the aim of improving outcomes for tutor and/or student, willing to explore disruptive

innovation, adapting or challenging traditional or 'approved' ways of doing things.” Respondent 31

“I take a lot of career risks (innovating in spite of resistance), changing jobs as often as necessary to stay engaged and empowered.” Respondent 136

The above extracts indicate that the individual’s personality, attitude and determination to experiment and generate ideas for learning and teaching play a key role in innovation. Resourcefulness helps overcome challenges and seems to push individuals to innovate in their practice and share their innovations with the wider academic community. Taking risks, being inventive, brave and not giving up, learning from failure and being a disruptive force seem to play key characteristics. Being this rebellious to learning and teaching together with, the realisation that innovation won’t spread if there is no wider buy-in and recognition of the value of the innovation indicates the role others play in innovation to spread more widely. Pedagogic innovation is perceived as newness explored within and across the disciplines that fosters experimentation and is driven by wanting to make a difference to student learning.

The findings indicate that the individual’s *education* (92%, 133) as well as experience (88%, 127) may also play a role in making pedagogic innovation happen. The following extracts provide some related insights:

“I keep learning (working on my Ed.D now)” Respondent 136

“To be scholarly about learning and teaching (so you have an evidence base to draw on and some stimulation)” Respondent 84

“... using your experience so that you can experiment with new ideas.” Respondent 86

“Passion, energy, experience, insight, independence” Respondent 88

“confidence, (based on knowledge and to some extent experience)” Respondent 59

The above extracts illuminate the important role continuous professional learning and inquiry play for innovators and how critical engagement with that experience together with independent thought and creative confidence drive the innovator to

push the boundaries. It needs to be acknowledged that experience, while it scored highly quantitatively (88%, 127) as an important factor for pedagogic innovation was in limited evidence in the related qualitative responses.

Interesting is the high number of responses relating to *obstacles* (34%, 50), *risk* (28%, 40) and *cautiousness* (20% 29) under the “not sure” option in question 6 (see Figure 1). This may provide an indication that obstacles and risk are perceived as enablers and barriers at the same time for pedagogic innovation depending on the individual’s response to these. The extracts may illustrate this in response to what innovators do:

“Someone who sees drawbacks in existing methods of teaching and is not afraid to look for and try different tools and methods to overcome these.” Respondent 124

“A creative approach to addressing obstacles to effective teaching and learning. The key challenge being student engagement.” Respondent 122

“The idiot who goes first, cops it from management, and then watches someone else get the teaching prize for doing exactly what they got reprimanded for doing five years earlier.” Respondent 110

The above extracts may evidence that pedagogic innovators forge ahead as they have the vision to make improvements in learning and teaching as well as problem-solve to enhance the student experience. Obstacles seem to act as opportunities to act and make change happen using imagination and inventiveness. However, some of the responses indicate that innovators’ efforts and risky strategies are not always acknowledged or recognised by their institutions from the outset. This does perhaps reveal feelings of not being valued or appreciated for what they bring.

Others

Beyond the individual qualities, the connections the individual has to others also appears to play an important role in pedagogic innovation. Particularly, *people* (88%, 126), *collaboration* with others (86%, 124) and *being part of a network* (80%, 113) appear to be of significance (see Figure 1). Further qualitative responses from the survey relating to factors that help make pedagogic innovation happen, generated the following:

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"Relationships with people who can help, support, encourage." Respondent 5

"Energy, enthusiasm, like-minded colleagues" Respondent 23

"Collaborative culture encouraging shared practice" Respondent 35

"The support of localised colleagues, who are not conservative or closed minded." Respondent 60

"A network of like-minded souls to discuss ideas with. This requires some institutional support (which in my case is lacking, to a large extent - I innovate despite my institution not because of it)." Respondent 84

"Collaboration with colleagues." Respondent 140

"Build a network of interested people, create an innovative network. Provide space for this to be carried out in terms of environment, equipment, technology and time." Respondent 124

"Networking with people who have done similar things is really very helpful. Join special interest groups for examples." Respondent 127

"Above all, however, there needs to be an institutional community of practice for educators, which provides a supportive and encouraging environment for people who wish to innovate within their teaching." Respondent 60

The findings indicate the important role collaborations play in pedagogic innovation to empower individuals to engage and build confidence and competencies. In the previous section, the lack of support from others was highlighted as a barrier to spread innovation. Here we see the important role others can play in spreading innovation beyond individual practices. Emphasis seems to be placed on collaborating with like-minded people, other innovators. Belonging to communities and the need for more opportunities for collaborations within institutions and the perceived responsibility of institutions to support and promote innovations is also highlighted.

The institution

While all respondents worked in a higher education institution in a range of roles (see Table 1), the responses linked to *institutional support* (80%, 116), *culture* (78%, 112) and *space* (62%, 88) may indicate that the institution itself may be perceived as somehow less important for pedagogic innovation to happen. This is further

explained through survey questions linked to the role institutions play in pedagogic innovation and some indicative extracts that are shown below:

“Most important is a desire to develop your own practice. Time, space and support from the institutions can help, but I don't think they in itself are enough to enable a person or a team.” Respondent 47

“Most innovators don't tend to see barriers. If you are talking about perceived institutional rules - a lot of innovators (not all) are happy to break or bend them.” Respondent 25

“Someone who runs against the mold and questions the implicit imperatives that shape learning institutions, be it through teaching approach, research methodologies or all-out pedagogical activism” Respondent 138

“Institutional tick-box, bureaucratic models of pedagogic delivery aren't barriers, they are slow-release toxic sufficants [sic]. Barriers that operate at the level of designing a pedagogical strategy based on learning and teaching strategies at a praxis level are really useful in helping to generate alternative paradigms.” Respondent 63

“HE is becoming pathetic. I'm not sure how much more I can take before I run screaming from the building.” Respondent 92

“Lack of time. Lack of opportunity to collaborate. Highly prescriptive course documentation.” Respondent 108

“Money really helps but if none is available, the genuine need for change can trigger innovation if the agents and conditions are right.” Respondent 53

“Reward and recognition at an institutional level is crucial - time, space and resource must be available to enable innovators to function effectively. Developing an institutional culture where innovation in T&L is prized is also vital. Institutional processes must be flexible and adaptable. Whilst innovation can be driven by institutional strategic initiatives, these must not be exclusively top-down, there must be buy-in across the institution to ensure a bottom-up engagement as well.” Respondent 24

“I am trying to publicise work better within the institution, sometimes it is easier to go to conferences and tell your story externally than sharing with colleagues in case of negative reaction. Back to barriers, you can sometimes get around them simply by not telling institution widely what you are doing. Also an innovation in discipline x will not be accepted by discipline y, simply because the subjects are different.” Respondent 141

“Showcasing talent and ideas in journals, repositories and conferences. Awards. PDR discussion. Career pathways” Respondent 18

“Award and recognise innovation. It feels good to be recognised for your work, and encourages others to take an interest.” Respondent 128

“Right now, what I really want is to be influential enough to be able to continue shaking up the university systems to make them take teaching seriously, to reward those who do it well, and to value it. I don't really mind if that involves promotion or not, but I do recognise that professors tend to get taken more seriously than those of us who are not - so ideally, a Chair would be nice. But if not, just having the ear of those who are powerful, and being able to influence them.” Respondent 84

Findings indicate that institutions may get in the way of pedagogic innovation. Too prescriptive and top-down requirements may leave little room and time for innovation. Furthermore, innovation that is imposed exclusively from the top does not seem to be helpful. Practitioners on the ground who innovate in their teaching are keen to have a voice within their institutions. While funding and resources are perceived as helpful, they may not be the deciding factor for pedagogic innovation. The findings suggest that innovators are resourceful in innovating when there is no funding. Pedagogic innovators seem critical of their institutions and overcome institutional challenges, often through going around institutional priorities, breaking the rules and finding allies outside their institution to innovate, as their driver is a vision for change which is empowering them. And while rewarding, recognition and promotion did not feature in Question 6, there were a range of qualitative responses that highlighted the perceived important role these play for innovators and to encourage, foster and spread pedagogic innovation.

In an institutional context, the following extracts provide further insights into the conditions that are perceived to boost pedagogic innovation linked to development opportunities:

“Training in innovation. Provide formal education programs (certificate to doctorate) on education and innovation.” Respondent 57

“I'd like to mandate bi-annual curriculum design workshops, facilitated by people from other departments (on a swap basis). The great courses do this and do it often. Some course teams rarely meet. They blame time but it is a lack of agency for the most part.” Respondent 44

“Encourage staff development in "different" ways than the norm.” Respondent 65

“Staff development across the team - innovative courses - happier students”
Respondent 79

“A reasonable familiarity with the pedagogic literature and to enable teaching-focused staff to attend meetings, training courses, and conferences to share the experiences and learn from others. Currently most teaching-focused staff do not have any institutional funding to do this.” Respondent 60

“We have an excellent University Center for Teaching and Learning (many times larger than the equivalent at my previous UK institution), a high-profile committee [...]and related awards, and a great programme of courses, events, and meetings for faculty and Teaching Assistants (including badges for PhD students).”
Respondent 42

“Person or persons who suggest/encourage/support academic teaching staff to invent/trial alternative strategies, activities and/or procedures with students to improve participation, academic skills, manage expectations, and/or reduce time consuming record keeping.” Respondent 75

“Shadow others, discuss with colleagues and own learners. Research opportunities via literature, online courses, training events etc.” Respondent 35

These findings suggest specific ways for how institutions can support and spread pedagogic innovation. The role of academic development, especially when this is cross-disciplinary and models less common or even novel approaches to learning and teaching is welcome and can have an impact on practices more widely. Furthermore, the findings suggests that teams working and innovating together will have a bigger impact on the student experience. Also, the adaptation of evidence-based approaches and peer-to-peer development, mentoring and champions all seem to be valuable strategies institutions could implement in spreading pedagogic innovation and create innovation cultures.

Boundary crossing features

There are specific boundary crossing features that stretch across the individual, the social and institutional context and relate to dimensions of the individual, collaboration and the institution. The findings of this study indicate that these are time, technology and space. *Time* (85%, 122) was noted as a significant factor for pedagogic innovation while *technology* (67%, 95) and *space* (62%, 88) may be

perceived as relatively less important while “unsure” responses in both these areas were relatively high (see Figure/Table....).

“I'm in a teaching focused role. I don't count as 'academic' so I am heavily loaded with teaching and admin, with hardly any time for scholarship and NONE for research. My pedagogic research and scholarship has to be done in my own time - I work long hours, up to 80 a week, in order to be able to stay innovative. Because I don't count as research active, I don't get funded to go to conferences etc. - so it's harder for me to network, although I've found ways!” Respondent 84

“Having the time to investigate, design and develop innovations” Respondent 140

“Someone who tries new things, new practices, new technology (but not necessarily technology-related), in order to enhance learning or address a known problem” Respondent 34

“An over-reliance on technology to provide the answers is a real risk, placing over-hyped faith in the latest shiny technology - experience shows us that this often leads to disappointment and in fact hinders progress in the longer run.” Respondent 24

“Recognise the value of innovative pedagogy to learning and teaching and provide resources (time and space) to allow to such innovations.” Respondent 21

“Time, space and resource must be available to enable innovators to function effectively.” Respondent 24

“Technology, buildings and space, time to research, innovative colleagues.” Respondent 27

“Technology and learning spaces that don't restrict” Respondent 48

“Collaborative spaces - physical and online” Respondent 58

“Create a sandbox for innovation - setting aside time and space for people to collaborate on projects.” Respondent 33

“Provide support and space to bring people together to share ideas and experiences.” Respondent 95

“Develop better spaces for learning. Lecture spaces for student group peer teaching.” Respondent 131

“Provide "space" (physical and mental) outside the normal work day to experiment.” Respondent 65

“Just give people a bit more space to teach the way they want to, and encourage an atmosphere of creative experimentation.” Respondent 43

“To develop in a research & teaching role where I have the time & space to be playful & become the best teacher I can be.” Respondent 77

“Freedom to experiment; more time and space for reflection. Free up space in the timetable for experimentation.” Respondent 90

“Supportive, with space to experiment and fail.” Respondent 124

These qualitative responses overwhelmingly report the need for time and space to innovate and suggests the vital role they play for pedagogic innovators together with the availability of resources, including technological tools. Some responses indicate the lack of institutional support for practitioners and their teaching - in contrast to research support - and the need to change this. Space was perceived as flexible arrangements of practice in which institutions provide the freedom to practitioners to explore, be experimental and collaborate with others in their teaching and inquiry-based innovation projects.

Contrasting these responses with the importance of the individual in the context of pedagogic innovation, the findings reported in this section may provide an explanation for how resourcefulness and the individual practitioner determination and fearfulness to innovate are significant in overcoming potential and perceived limitations and challenges that may be experienced in an institutional context and drive innovative practice based on their creative vision to identify more suitable learning and teaching approaches for their students as well as fulfil their desire to experiment to make this vision a reality. The findings also point towards the importance of cross-disciplinary professional learning and collaboration with peers within programmes, networks and communities during the innovation process. Furthermore, they signalise also, that the support from the institution and the wider recognition for innovation and innovators themselves seems to be largely missing as the findings suggest.

Discussion

In this article the authors set out to identify the conditions that foster pedagogic innovation through analysis of quantitative and qualitative data from a survey instrument. Pedagogic innovation in this study is understood as the introduction of a

new approach in a specific context, it is relative not necessarily novel or absolute and not necessarily linked to the use of digital technologies, in a specific disciplinary context that is of value and triggers a positive change for students and staff and their learning and development.

The findings of this study have been brought together in Figure 2. This indicates who seems to be at the steering wheel of pedagogic innovation, its key drivers and how they are interlinked.

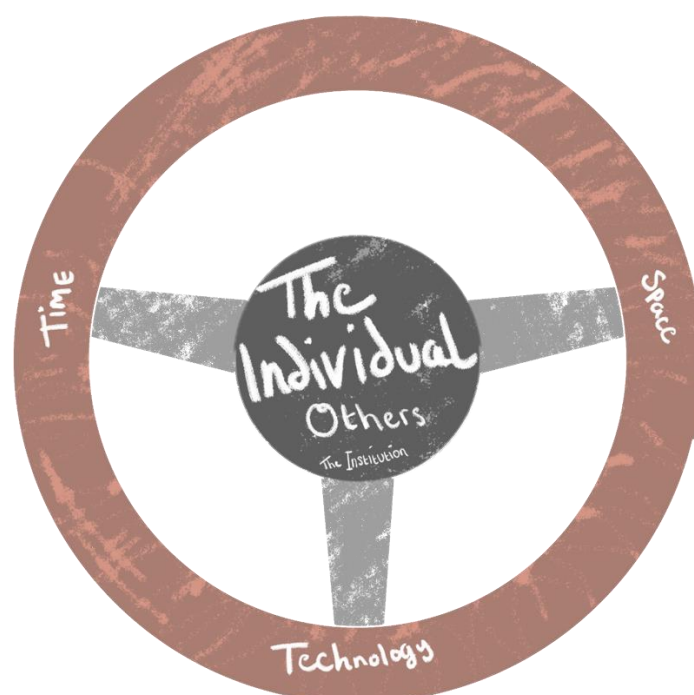


Figure 2. The steering wheel of pedagogic innovation and key drivers

Figure 2 shows that the individual is at the heart of the steering wheel and drives pedagogic innovation followed by others and a lower perceived importance of the role the institution plays. Time, technologies and space bundled together cut across the individual, others and the institution and seem to play a supporting and enabling role in influencing and shaping pedagogic innovation.

According to this study, the individual is the key driver of pedagogic innovation. Their personality, attitude, skills, behaviours and actions towards innovation and their commitment to it, through practice, experimentation and development. These

findings are aligned with Draper *et al.* (2014) but also Freire (2011) who talked about the importance of personal curiosity in making innovation happen. While curiosity and experimentation were identified as drivers of pedagogic innovation in this study, the will to make a difference to students was considered equally important – a point also made by Jackson (2014). Creativity and generating ideas in order to overcome challenges and barriers with the intention of enhancing and transforming the learning experience of others, both students and staff, was a strong motivator for respondents to take risks and engage in pedagogic innovation.

Opportunities for innovating with others through collaboration in learning and teaching seems to be important (Jackson, 2014). While Cowan (2006) illuminates the importance of collaborating with like-minded others, more diverse encounters and other-mindedness- seems to play an equally important role. Our findings indicate that individuals recognise the value of collaboration and are further empowered to innovate through joined-up working. Crawford's (2009) study indicated that new academics tend to reach out to connect with external disciplinary communities and networks for their professional development after completing their institutional probationary requirements, often in the form of a PgCert in Learning and Teaching in Higher Education or Academic Practice, as this gives them the freedom to pursue their own pedagogical interests and they feel a sense of belonging to these groups. From an institutional perspective, Di Napoli (2014) for example, recognises that managerial approaches to academic development have negative effects on internal engagement. Nerantzi's (2017) study provides further evidence of the value academics place on cross-boundary professional communities which not only include colleagues from other higher education institutions, disciplines, cultures and countries but also students and other professionals outside the higher education sector. However, the findings of this current study, suggest that academics also desire and need to connect with colleagues in their own institutions and feel a sense of belonging locally that could be empowering for making pedagogic innovation happen. There seems to be a desire among practitioners that their institutions should support wider opportunities for collaborative working and for the development of professional communities. Fernie-Clarke and Thomas (2011, p.75) present an example from art, design and media in which colleagues working collaboratively

across Higher and Further Education contexts showed that internal professional disciplinary communities are willing to overcome difficulties in order to engage in research and "strengthen working links" Orr and Shreeve (2018) more recently in the context of studio-based education, recognise that there may also be tensions within art and design education communities that can be overcome when related discipline groupings are brought together, suggesting that looking inwards and outwards is equally important in social practice.

The findings indicate that, in order to innovate, what practitioners expect from their institutions, is support. While institutions are keen to innovate, they often implement top-down strategies, but their drivers for innovation seem to be different from those of practitioners as they often focus their efforts on efficiency and resourcing, cost-cutting and income generation (Jackson, 2014). What also needs to be acknowledged is the increased competitiveness that characterises UK Higher Education and the pressures on institutions to climb up the league tables and evidence that they perform to the highest standards in research, teaching and knowledge exchange. Institutions spend considerable resources on strategic interventions that they anticipate will help them to achieve their goals and attract students and staff (Burgess, Senior and Moores, 2018). Looking closer at the current findings in this context, it is clear that the perceived role of the institution in innovation as relatively unimportant may be connected to some of the challenges and frustrations pedagogic innovators experience in their own institutions. This may be due to perceived dis-or mis-alignment and lack of support, appreciation or recognition, also reported by Jones-Devitt and Quinsee (2018) in relation to NTFs. This may explain why innovators often turn to external disciplinary and cross-disciplinary networks and communities to pursue their own development needs, find allies elsewhere and feel empowered to push ahead with pedagogic innovation despite the difficulties they may experience locally in their own institution. Practitioner-driven innovation may start small and from personal practice, but it has the potential to spread, to have a ripple effect within and beyond a programme or a specific discipline. Academic development can play a key role by modelling alternative approaches as well as bringing pedagogic innovators together in internal

communities and networks to nurture talent and spread creative and innovative learning and teaching approaches (Nerantzi, 2016).

Boundary crossing factors such as time, technology and space that apply to the individual, others and the institution also play a role in shaping pedagogic innovation and therefore make up the steering wheel as depicted in Figure 2. The findings confirm that technology seems to be integrated into practice and is no longer seen automatically as an innovation itself (Phipps & Clay, 2018; Ferguson *et al.*, 2019). The findings confirm the important, although not exclusive, role of digital technologies and digital practices in innovation. Time and space are important resources for innovation and experimentation. Time is particularly important, but is not always available due to the multiple pressures on academics and their institutions and a deep metrics and output driven culture that seems to dominate the HE landscape at least in the United Kingdom. It is clear that institutions can play a key role in creating the conditions for pedagogic innovation by supporting experimentation at practitioner and institutional level, which as Ryan and Tilbury (2013) note, would make a real difference to what is happening in institutions. If, as we also see in the current study, institutions focus on enabling and empowering practitioners to innovate pedagogic innovations could spread more widely and have the potential to transform the current learning and teaching cultures in higher education.

Implications for institutions

Pedagogic innovation is practitioner powered. It attracts individuals who are empowered and will take risks to explore new territories against the odds with a vision and determination to improve and transform practice and the student learning experience. The findings suggest that innovators develop “tactics for alternative and transformatory practice” (Hammond, 2017, p.21) to overcome barriers and blocks and by refusing to conform with an institutional reality they may disagree with. This is not easy and not everybody is prepared to follow this path. Institutions could play a more active role in supporting and empowering pedagogic innovators and help spread innovation in learning and teaching across their institution so that it can be

transformative for the student experience. This would help the senior leaders of an institution meet their strategic goals.

Institutions might argue that they do provide opportunities through creating roles such as teaching fellows and champions – at discipline and institution level, through providing internal support to enable staff to make applications for awards and funding or by providing opportunities for staff to take a PgCert or other postgraduate qualification such as a doctorate. A key and more recent development has been the focus on reward and recognition (promotion) around teaching. This may be a result of the push toward the professionalisation of teaching which is aligned to the UKPSF through Advance -HE. However, in the times of metrics and a highly professionalised higher education sector in the UK that is output driven and highly competitive, it is difficult to see how higher education institutions can move away from highly regulated and often prescriptive top-down interventions that often focus on standardisation and benchmarking. Building-in freedom and time for academic staff to innovate in their practice, and invest in versatile academic development opportunities that nurture and model new and novel approaches is important (Stefani, 2017). Encouraging collaborative working and supporting communities and networks, as well as evidence-based models, recognising and rewarding pedagogic innovation could further boost, grow and spread innovation across an institution and could have a positive impact which can transform the student experience.

Conclusions

The findings shared in this article, highlight the conditions for pedagogic innovation to spread. Individuals and their relationships with others, internally and externally to their institution, seem to be the drivers for such developments. Institutions can play a more active role in supporting their staff through fostering collaborations and professional communities. Institutions could also provide more diverse development opportunities to their staff while also acknowledging and recognising pedagogic innovators and the time required to engage in professional development, and to innovate in their practice. Furthermore, they could encourage and promote evidence-based approaches to spread pedagogic innovations across disciplines, the institution and the wider academic community. Further research is required to

explore the role experience and recognition play in pedagogic innovation as well as the personal conditions considered important to innovators briefly noted in this paper.

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